

App. No 10/813,520
Amdt. dated May 17, 2006
Reply to office action of February 17, 2006

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A gas turbine engine comprising:

a compressor section;
a combustion section downstream of the compressor section;
a turbine section downstream of the combustion section;
an axial flow plenum extending through the engine, the axial flow plenum having at least one outlet fluidically coupled to the turbine section; and
at least one fluid flow directional modifier disposed proximate the axial flow plenum; and -

wherein said at least one fluid flow directional modifier extends directly from a wall forming a trailing edge of a vane and is in the form of a turning foil with an arcuate surface that encourages parasitic leakage air flowing radially outwardly to be turned so as to be flowing substantially parallel to the gas flow path at the trailing edge of the vane.

Claim 2 (currently amended): The gas turbine engine of claim 1, wherein the fluid flow directional modifier is ~~a turning foil~~ directly cast with the vane.

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Claim 3 (withdrawn): The gas turbine of claim 1, wherein the fluid flow directional modifier is a turning hole.

Claim 4 (withdrawn): The gas turbine of claim 1, wherein the fluid flow directional modifier is a turning groove.

Claim 5 (withdrawn): The gas turbine of claim 1, wherein the fluid flow directional modifier directs fluid radially outwardly.

Claim 6 (original): The gas turbine engine of claim 1, wherein the fluid flow directional modifier directs fluid radial outwardly.

Claim 7 (canceled)

Claim 8 (currently amended): A gas turbine engine, comprising:
a compressor section injecting ambient air and exhausting compressed air;
a combustion section downstream of the compressor section and receiving the compressed air, the combustion section introducing fuel to the compressed air and igniting the fuel and air to result in combustion gases;

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a turbine section downstream of the combustion section, combustion gases traversing from the combustion section through the turbine section along a combustion gas flow path; and

a turbine section cooling and parasitic leakage system proximate the turbine section, wherein said cooling and parasitic leakage system includes at least one flow directional modifier extending directly from a wall forming a trailing edge of a vane and is in the form of a turning foil with an arcuate surface that encourages parasitic leakage air flowing radially outwardly to be turned so as to be flowing substantially parallel to the combustion gas flow at the trailing edge of the vane. ~~the turbine section cooling system directing cooling and parasitic leakage air into the turbine section substantially in the direction of the combustion gas flow.~~

Claims 9-10 (canceled)

Claim 11 (withdrawn): The gas turbine engine of claim 9, wherein the fluid flow directional modifier is a turning hole.

Claim 12 (withdrawn): The gas turbine engine of claim 9, wherein the fluid flow directional modifier is a turning groove.

Claim 13 (original): The gas turbine engine of claim 9, wherein the fluid flow directional modifier is radially inward of the turbine section.

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Claim 14 (withdrawn): The gas turbine engine of claim 9, wherein the fluid flow directional modifier is radially outward of the turbine section.

Claim 15 (original): The gas turbine engine of claim 8, wherein the turbine section cooling and parasitic leakage system directs cooling and parasitic leakage air circumferentially through the turbine section.

Claim 16 A method of operating a gas turbine engine, comprising:
compressing air in a compressor section of the gas turbine engine;
directing the compressed air into a combustion section of the gas turbine engine;
injecting fuel into the combustion section of the gas turbine engine thereby igniting the fuel and compressed air to create combustion gases;
directing the combustion gases from the combustion section into a turbine section of the gas turbine engine along a combustion gas flow path; and
introducing directing cooling and parasitic leakage air, flowing radially outwardly, into the turbine section substantially in the direction of the combustion gas flow path with at least one fluid flow directional modifier extending from a wall forming a trailing edge of a vane and in the form of a turning foil with an arcuate surface.

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Claim 17 (original): The method of claim 16, wherein the cooling and parasitic leakage air is introduced from a position radially inward of the turbine section.

Claim 18 (withdrawn): The method of claim 16, wherein the cooling and parasitic leakage air is introduced from a position radially outward of the turbine section.

Claim 19 (canceled)

Claim 20 (withdrawn): The method of claim 16, wherein the cooling and parasitic leakage air is introduced using turning holes.

Claim 21 (withdrawn): The method of claim 16, wherein the cooling and parasitic leakage air is introduced using turning grooves.